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AUTHOR Fenton, Ray J.
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ABSTRACT

This paper reviews the results of training more than 2,000 teachers in a small group instructional method, cooperative learning. Comparisons were made between teachers with more than 15 hours of training, and teachers with fewer hours of training. It was found that teachers who had more formal training were more likely to use small group instructional methods in a variety of subject areas. They were also more likely to force students to share materials, to divide materials so that students would have to work as a group, and provide feedback on group processes and cooperation. Students of teachers with more training also reported that cooperative learning groups were used in more areas of instruction and that small group learning took place more frequently in their classes. Notable differences were reported in students' experiences and attitudes when they were considered in terms of the training of their teachers, their level of achievement, the number of weekly small group lessons they received, and their feelings about the quality of their academic work. Students of both more and less trained teachers made small academic gains. However, students of teachers with less than 15 hours of training made a 60 percent greater gain than those who were in the classes of more trained teachers. Lower achievers made the most academic gains from small group instruction and made more gains when there was more small group instruction. (JD)

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THE EFFECTS

OF

TRAINING IN SMALL GROUP INSTRUCTION

RAY J. FENTON
ANCHORAGE SCHOOL DISTRICT

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ABSTRACT

THE EFFECTS OF TRAINING IN SMALL GROUP INSTRUCTION

The paper reviews the results of training more than 2,000 teachers in a small group instructional method, cooperative learning. The training involved more than 17,000 hours of instruction which included after school in-services, full and half day training sessions, and university graduate classes.

A survey of teachers and their students was conducted to assess the effects of the training. Comparisons were made between teachers with more than 15 hours of training and teachers with fewer hours of training. It was found that teachers who had more formal training were more likely to use small group instructional methods in a variety of subject areas. More trained teachers were also more likely to force students to share materials, to divide materials so that students would have to work as a group, and to provide feedback on group process and cooperation.

Students of teachers with more training also reported that cooperative learning groups were used in more areas of instruction and that small group learning took place more frequently in their classes. Notable differences were reported in students experiences and attitudes when students were considered in terms of the training of their teachers, their level of achievement, the number of weekly small group lessons in which they participated, and their feelings about the quality of academic work completed in small groups. Students were very positive about learning in small groups.

Student achievement was assessed with a standardized measure of basic skills. It was found that the students of both more and less trained teachers made small academic gains. However, the students of the teachers with less than 15 hours of training in small group interaction made a 60% greater gain than those who were in the classes of more trained teachers. Lower achievers made the most academic gains from small group instruction and made more gains when there was more small group instruction.

It was concluded that the introduction of cooperative learning, a small group method of instruction, was a successful innovation with positive benefits for teachers and students. Teachers were so enthusiastic that about 25% of the 2400 teachers exposed to cooperative learning chose to take advanced training through university credit courses. Teachers and students reported that they felt the use of cooperative learning was positive and that it improved academic performance.

THE EFFECTS OF TRAINING IN SMALL GROUP INSTRUCTION

Students working together in small groups is a commonplace in the classroom. It was long ago demonstrated that having students cooperate in groups may enhance learning, improve social relationships, and encourage individuals to spend more time working on educational tasks (Johnson and Johnson, 1984a). The widespread use of small group instruction has not, however, made small group methods a commonplace in teacher training programs. This paper details the implementation and effect of a large scale training program intended to modify teacher-student interaction through the training of experienced teachers in the use of one small group instructional technique, cooperative learning.

A variety of experiments have been conducted over the years which demonstrate that the approach of the teacher to group instruction can increase group effectiveness and improve the chances that individuals will learn more through group participation than they might otherwise learn. Deutsch (1949) for example showed that having a group develop shared common goals led to greater success in a classroom setting. Others have shown that providing common rewards can lead to enhanced group success (Kelly and Thibaut, 1969). There are more recent examples that show the positive effects of planned use of small group instruction in reading (Brown and Palincsar, 1968), writing (Neubert and McNeils, 1986), mathematics (Brophy, 1986), home economics (Dittman, 1987), social studies (Logan, 1986), and other content areas (Johnson and Johnson, 1984b).

Various methods have been suggested to teachers to insure that learning groups would communicate in a way which would improve student achievement. They have ranged from very structured methods to just getting students together and asking them to come up with as many ideas as possible about a subject. Setting up tournaments where groups of cooperating individuals competed with other groups and were rewarded as a group has shown how rewards may be structured and manipulated (e.g. De Vries and Slavin, 1978; Slavin, 1978). Even having individuals master specific bits of information and then arranging the group so that combining individual member information produces a complete product or solution has proved effective (Aronson, 1978).

David W. Johnson and Roger T. Johnson (1984a, 1984b) have integrated many of the methods and strategies which have encouraged cooperation in small groups and produced positive educational effects into a method which they call cooperative learning. They have prepared introductions to their method of group instruction which encourage teachers to use a basic approach which stresses both the use of group rewards for individual learning and a shared responsibility for the learning of all individual group members (Johnson and Johnson, 1984a). The Johnsons have worked with elementary school, secondary school, and college teachers to develop lesson plans to serve as models for lesson development in a variety of subject areas (Johnson and Johnson, 1984b).

The decision to encourage small group instruction across the entire Anchorage School District came from Staff Development Department training specialists based on the recommendations of teachers who had been exposed to the methods and materials of David and Roger Johnson. After some investigation of the effects of small group instruction, it was decided to encourage a program which would introduce cooperative learning to all of the teachers of Anchorage. It was hoped that placing an emphasis on training in small group methods would result in improved communication skills and enhanced academic achievement for students.

Making a commitment to training teachers in small group instruction was an important decision because of the number of people involved. The Anchorage School District enrolls more than 40,000 students and employs more than 2,200 teachers. The district is the largest urban district in the state of Alaska and enrolls more than 40% of the students in the state. The students of Anchorage have done well over the years in spite of a good deal of cultural diversity and relatively large numbers of bilingual students. The district has attributed this success to the sophisticated instruction provided by a teaching staff which on the average has more than eleven years of teaching experience. The average teacher has at least a Master's degree or its equivalent in hours of university study. It was expected that it would take from two to three years to introduce the use of small group instruction to all interested teachers and to observe any resulting growth in student achievement.

Training Teachers in Using Small Group Instruction

Roger Johnson was invited to visit the school district and talk with the staff about cooperative learning in March of 1983. He made a series of six hour presentations to selected teachers who had been active in introducing past innovations. He also spoke to a Management Academy which provides continuing training for administrators and potential administrators. The basic cooperative learning method was explained and the benefits of cooperative learning were discussed. The groups supported the introduction of small group learning through in-service training for all teachers.

District staff was involved in a variety of training efforts during the 1984-85, 1985-86, and 1986-87 school years. Training was provided in after school in-services for small groups of teachers. There were full and half day training sessions offered as part of released-time in-service days for larger groups. University graduate classes in the basic cooperative learning method and advanced classes in lesson development and cooperative learning strategies in specific content areas were offered through the University of Alaska Anchorage and Alaska Pacific University. There were also weekend workshops for teachers and special workshops for teachers who would train others through peer coaching and building level in-services.

Attachment A details what grew to be more than 17,000 hours of staff time spent in learning about small group instruction. While no complete record was kept of participation in after school in-services which would show an all inclusive count of participants, there were more than 2,000 documented participations in the various training activities.

Roger and David Johnson were brought to Anchorage repeatedly to speak to teacher groups and to participate in one hour credit graduate classes sponsored by the school district, University of Alaska, and Alaska Pacific University. Basic training in all of the elements of cooperative learning was offered in 1984. The basics were repeated in 1985, 1986, and 1987. There were advanced classes in 1986 and 1987 and some specialized training in using small groups to teach computer skills, mathematics, and higher order thinking skills. Some teachers who were part of teams working to improve instruction in individual schools were given time to work with other teachers and demonstrate small group lessons in classrooms.

There was no guarantee that any one individual participated in any training in small group instruction techniques. Not all of the more than 70 schools in Anchorage actually had in-service training in cooperative learning although some individuals from all schools participated in training. Table 1 provides an overall summary of various activities which were documented by the district Staff Development Department.

Table 1
COOPERATIVE LEARNING TRAINING
SCHOOL DISTRICT STAFF PARTICIPATION
1983 - 1987

ACTIVITY	NUMBER PARTICIPATING
After School In-Service	2,614
University Graduate Courses	604
Half-Day In-Service	465
Full-Day In-Service	170
Preparation to Train Others	93
Advanced Graduate Courses	71

The Anchorage School District Assessment and Evaluation Department was asked to assess the success of the effort to introduce cooperative learning as an instructional innovation. Declines in the Alaska economy due to falling oil prices had limited the amount of money available for staff training. The amount of training which had taken place by the start of the 1986-87 school year had already involved many of the district teachers and there were questions about the benefits of providing continued support for training in small group instruction methods.

Assessing The Effects of Training Teachers In Group Instruction

When the commitment was made to training teachers in small group instruction methods, it was hoped that the training would have three effects. First, it was hoped that small group instruction would get more use in the classroom. Second, it was hoped that the increased use of small group instruction would produce some positive learning effects. Third, it was hoped that teachers would involve themselves in learning to use small group instruction as a way of increasing their personal skills and enhancing their own professional image.

The degree of the implementation effort was evident in the participation statistics. Since after school in-service is held at the discretion of the school principal, usually with the support of the school staff, the number of schools and teachers who participated in after school in-services indicated widespread grass roots support for cooperative learning. Enrollment in graduate level classes indicated that more than 25% of the teaching staff had elected to use their own time and money to further learn about using small group methods in the classroom.

Interviews were held with two dozen teachers to informally gauge the use of cooperative learning, to learn about specific training elements, and to discover reactions to the use of cooperative learning in the classroom. Most of the interviewed teachers indicated that they made a lot of use of small group instruction. It appeared to be a common mode of instruction in Kindergarten and the lower elementary grades and was often used in language arts, science and social studies at upper grades. Secondary teachers appeared

less likely to use small group interaction as an instructional technique though it was frequently used in language arts classes where group editing of writing and discussion of literature was common. Social studies teachers reported use of group simulations and other discussion activities.

All of the teachers interviewed had some experience with cooperative learning training and had at least discussed the use of cooperative learning methods and specific lessons with other teachers. Most had participated in some training. Those who had participated in graduate courses indicated that they were selective in their use of various elements of cooperative learning but did frequently use some elements in small group instruction in their classes.

It was decided that the best approach to assessing a program with such a widespread effect and diverse individual experiences would be through surveys of teachers and students. Questionnaires were developed to elicit information about attitudes, activities, and various elements of cooperative learning lessons, workshops, and instructional use. It was also determined that a standardized test of achievement had been used with many students and that pre- and post-achievement scores in basic skills would be available for students who were enrolled in classrooms of teachers who had been trained in cooperative learning.

A sampling approach was adopted because it was likely that more than 2,000 teachers had participated in some form of training and more than 40,000 students might have been effected. The effects on teachers would be measured on a survey of all teachers who had participated in advanced training and a sample of 300 teachers whose actual participation in advanced courses was not documented. It was decided to ask the teachers in grades three and above to identify high, average, and low achieving students in their classes and to survey those students. Copies of the assessment surveys are included as Attachment B.

Three hundred and ninety-six completed surveys were returned by teachers. Two hundred and forty-nine of the respondents had participated in 15 or fewer hours of training. These teachers were designated as the low training group. One hundred and forty-seven of the surveys came from teachers who had participated in more than 15 hours of training. These teachers were designated as the high training group. Only seven of the surveys were returned by teachers who had either no training or had participated only in informal after school in-services. These seven teachers were included in the low training group.

More than 1200 students were surveyed. Pre- and post-test achievement results were available on more than 750 of the students. A few of the students could not be identified because of errors in coding student identification numbers. It had been expected that as much as 30% of the group of surveyed students would not have pre- and post-achievement scores available because the annual turnover rate of students in Anchorage approaches 20%. There are also some non-English speakers and special education students are not tested.

The Assessment of Cooperative Learning by Teachers

One hundred and thirty-eight teachers returned both teacher and student surveys to the Assessment and Evaluation Department at the end of the 1986-87. Ninety-five of the teacher surveys were from the sample of 300 teachers who had less than 15 hours of documented training for a response rate of about 32%. Forty-three were of the seventy-one teachers who were known to have had more than 15 hours of training for a response rate of about 61%. The overall response rate was 37% which was deemed acceptable for the purposes of the study.

Table 2 shows that even the low training group had a substantial amount of contact with cooperative learning ideas. Like most successful educational innovations the use of cooperative learning strategies had been shared among teachers. The high percentage of low training group teachers who reported participation in university credit courses was a surprise. It suggests that many of the teachers in the low participation group may have participated in courses which were not sponsored by the Anchorage School District.

Table 2 shows that the exposure to small group instructional practices through discussion with other teachers and reading articles was not significantly different for the two groups. Almost three out of four had read about cooperative learning and nine out of ten had talked about it with other teachers. Most of the high training group had participated in a workshop on cooperative learning, 69%. Nine out of ten had completed a credit class. As expected, there was a significant difference in the high and low training groups in the proportion reporting participation in most activities.

Since after school in-services are organized at the school level, this item suggests that one of the differences in the two groups may be that those who choose to seek more training were more often from schools where cooperative learning emphasized and more often used. Those who were in the low training group were more likely to have had to seek out exposure through participation in district wide full- or half-day in-services which were offered a central location to larger groups.

All statistical tests are performed using the Statistical Package for the Social Sciences, (SPSS-X, 1983).

Table 2
Cooperative Learning
Reported Experiences Related to Cooperative Learning
Teachers

Experience	High Training N = 43	Low Training N = 95	P>*
Discussion with other teachers	95%	87%	NSD
Read articles about cooperative learning	86%	73%	NSD
Tried cooperative learning ideas in the classroom	93%	67%	.000
Participated in after school in-service	42%	23%	.036
Participated in a full or half day in-service	35%	47%	NSD
Participated in a workshop on cooperative learning	69%	44%	.004
Participated in a full length university credit course	93%	61%	.000

*Probability based on χ^2 of difference in proportion.

The teachers who had more training were likely to actually use more small group teaching activities. Table 3 shows that significantly more lessons were used in some areas. One of the elements of most of the advanced training sessions and graduate classes which was not stressed in the basic sessions was the development of actual lessons. Advanced training also provided for practice in the use of cooperative learning small group strategies. Part of the difference in lesson use may stem from the actual experience in lesson preparation in various subject areas.

Table 3 shows the extent to which teachers reported using cooperative learning small group instruction in their classes. Response choices were 0 for no use, 1 for one or two uses, 2 for three to five uses, 3 for six to ten uses, and 4 for eleven or more uses.

Table 3
Cooperative Learning
Reported Group Lesson Use Reported by Subject Are Teachers

Subject Area	High Training N = 43	Low Training N = 95	p>*
Reading	2.4	1.5	.006
Mathematics	2.4	1.6	.008
Science	2.0	1.7	NSD
Social Studies	2.1	1.4	.017
Health/P.E.	1.1	1.0	NSD
Music/Art	.5	.5	NSD
Overall Average	1.7	1.4	.014

*Probability of difference in group means, two-tailed t-test.

Overall, modal number of group lessons reported each week was from three to five for the high training group and one or two for the low training group. Significantly more of the high training group reported the use of at least one group lesson in the week prior to the survey. Twenty-three percent, 23%. of the high trained group reporting use of at least one lesson as compared to 16% of the low training group ($p > .066$).

Some of the results reported in Table 3 reflect the way in which the curriculum is implemented in Anchorage. Music and Physical Education instruction is provided by specialists in those content areas. This instruction takes place outside the regular classroom. Elementary science is based on a "hands on" approach with many group exercises and experiments included in kits of materials provided to teachers. Art is taught in the regular classroom but is supported by specialists who make classroom visits. The areas where the differences are greatest between the two groups are the areas where specific training in lesson development was included in advanced classes and workshops.

Table 4 shows the use of some specific elements of the cooperative learning method of group instruction. Teachers were asked to mark a five point scale which ranged from never (1) to usually (4). Responses of "Does Not Apply" and missing responses were coded as 0 allowing group averages of less than 1. Table 4 shows the responses to high and low training group teachers to specific elements of cooperative learning which may have been included in their training.

Table 4
Cooperative Learning
Teacher's Use of Specific Instructional Activities

Activity	High Training N = 43	Low Training N =95	p>*
Force students to share materials	2.3	1.9	.043
Divide materials so students must integrate	2.1	1.5	.009
Assign special roles to some group members	2.1	2.0	NSD
Give grades to individuals based on whole group	2.1	1.7	NSD
Intervene in groups to encourage/balance participation	2.5	2.3	NSD
Provide groups with feedback on behavior and cooperation	2.4	2.0	.022
Designate one group member to represent the group	.8	.9	NSD
Provide groups with time to discuss group process	1.5	1.5	NSD
Overall Sum of Items	16.2	15.0	NSD

*Probability a difference in group mean rating is based on a two-tailed t-test.

For the most part, the differences in use of specific elements of cooperative leaning are small but in the expected direction. Since not all elements were included in all training and most of the low group had participated in some workshop or in-service training on the most common elements of cooperative learning, it is not remarkable that the differences in the two groups are not statistically significant in all areas. Some of the differences are however both significant and interesting.

It appears that the high and low training group teachers were about equally likely to intervene during a group discussion to encourage students and to seek a balance in participation. However, it is the teachers with the greatest training in small group methods who more often took the time to provide feedback to students on group process and the use of specific cooperative behaviors within the group. That is, more trained teachers were more likely to focus both their attention and the attention of their students on communication skills and interaction strategies.

The more trained teachers were also more likely to develop lessons where students had to share materials to complete an assignment. One of the comments made by teachers during interviews was that while they liked the use of group lessons in various content areas and found them to be successful, they also found the lesson preparation to be time consuming and difficult. This was particularly true if the teacher had to manufacture materials.

It may be that the significant difference in high and low trained teachers in the questions related to materials comes from the fact that taking advanced training shows more dedication to the use of small groups and a willingness to exert more effort. Of course, it may also be that the advanced training provided teachers with more examples of how to prepare materials resulting in faster and easier lesson development.

Teachers were also asked to indicate their feelings and attitudes about various aspects of cooperative learning. It was expected that the teachers who had participated in more training would be more positive about cooperative learning than teachers who had made less of a commitment. However, both the high and low training groups showed a high level of agreement with a series of Likert-like scale items related to their attitude toward various elements of cooperative learning. The average group responses for high and low training group teachers are shown in Table 5.

Table 5
Cooperative Learning
Teacher Attitude Toward Cooperative Learning

Question	High Training N = 43	Low Training N = 138	p>*
Cooperative learning is			
- effective in most disciplines	1.4	1.6	NSD
- increases student participation in learning	1.3	1.4	NSD
- improves student decision making skills	1.3	1.4	NSD
- encourages performance of high ability students	1.9	1.8	NSD
- encourages performance of average ability students	1.5	1.6	NSD
- encourages performance of low ability students	1.7	1.6	NSD
- is an efficient teaching technique	1.5	1.3	NSD
- is something I plan to use in my classroom	1.4	1.7	NSD
- It is equitable to reward individuals for group work.	2.3	2.2	NSD
Overall average	15.7	16.6	NSD

*Probability of average group difference based on two-tailed t-test.

The attitude scales ranged from 1, strongly agree, to 5, strongly disagree. Table 5 reflects the strong positive reaction of most of the teachers to the elements of cooperative learning. This is an explanation of why such a large proportion of the teachers in the district decided to participate in optional in-service training and university credit courses. The two least favorable ratings for elements of cooperative learning relate to

two of the things which are stressed in cooperative learning training: group grades and effects on high achievers.

The research reviewed in the basic training class stresses that small group learning worked equally well with high, average, and low achievers. The average responses to the items relating to how well cooperative learning worked with high achievers shows less certainty on the part of both high and low training group teachers of the effects of cooperative learning on high ability students.

The other area where the ratings of both high and low training group teachers is notably lower relates to giving individuals grades on the basis of the success of the entire group. Interviews with teachers suggested that some teachers felt that giving individuals grades based only on performance of the whole group was not fair either to those students who showed little motivation and achievement or to those students who did more than the average amount of work and showed substantial achievement.

Grading was discussed at some length in some of the training sessions. Some teachers who were interviewed felt group grades were unfair and did not use them. Some teachers gave both individual and group grades for all group projects. Some teachers gave only individual grades. Some teachers did all three based on the nature of the group lesson and the amount of work expected of individual group members. Unfortunately, no information was gathered which would have allowed examining student performance relative to the grading system employed.

From the point of view of the teacher, the introduction of small group learning as a method of instruction has been largely successful. The training in small group methods was introduced and accepted as a positive innovation by the majority. Most opted to participate in some aspect of in-service training and felt that they had learned to use a useful instructional tool.

Those who took the fullest advantage of the district sponsored university credit classes reported that they made use of small group instruction in a variety of subject areas. They also used more small group instruction than those who were less trained. The majority of the teachers felt that the use of cooperative learning groups was positive for high, low and average achieving students though some questions remained about the differential effect of group learning on high and low achieving students.

The Effect of Cooperative Learning on Students

The primary hope in introducing cooperative learning as a method of instruction was that it would result in improved student performance. Teachers in grade three and above were asked to select five high, five medium, and five low achievers from their classes and to give each a questionnaire. The questionnaires included items about the areas in which group instruction took place, characteristics of the work in groups, and student attitudes. Some of the questions were provided by Dr. David Johnson and had been used to assess student attitudes relative to group learning as part off an ongoing research effort (See Johnson and Johnson, 1983).

More than 1200 students completed questionnaires. More than 1170 were identified as having had either a high or low training instructor and as high, medium, or low ability. A smaller group, 674 had both pre- and post Iowa Tests of Basic Skills or Tests of Achievement and Proficiency achievement scores available (Riverside, 1984).

The students reported that their teachers made a good deal of use of small group instruction. The modal use of small group lessons reported by students who had group instruction in the areas identified in Table 6 was 1 or 2 lessons a week in all of the areas listed except music/art and science. The most common response in science and music/art was 2-3 lessons each week.

Table 6
Cooperative Learning
Areas of Small Group Instruction Reported by Students

Subject Area	High Training N = 436	Low Training N = 776	p>*
English/Reading	68%	64%	.044
Social Studies	77%	71%	.062
Mathematics	72%	54%	.018
Health/P.E.	62%	60%	.016
Science	76%	79%	.038
Music/Art	50%	44%	.052

*Probability based on number of reported lessons. Two-tailed t-test.

Students were more likely to report that they had small group instruction in more areas if their teacher had more than 15 hours of training in the use of small group instruction. This held true in all of the individual areas except science where the curriculum prescribes small group instruction. While more than half of the students reported that small groups were used in all subject areas other than art and music, the differences between students of high and low training group teachers are particularly notable in some of the areas of instruction. For example, in mathematics 18% more of the students of those teachers who had a higher degree of training reported that small group instruction was used in their classes.

Table 7 on the following pages allows comparison of student responses to a series of questions about the type of work they did in groups and their attitude toward various aspects of group work. These are broken down by the amount of training received by teachers, how teachers rated the quality of the student's academic work, the number of small group lessons students reported for the week, and the rating by students of the quality of the academic work which they felt they produced in small groups.

The students responded to the questions on Likert-like scales where an answer of 1 indicated that the statement was completely true and an answer of five indicated that it was completely false. Table 7 is somewhat complicated, but it makes for some interesting comparisons.

Students of teachers with more training were significantly more likely to agree with statements which related to specific methods of group instruction included in the teacher training with one exception. The students in learning groups organized by more trained teachers were more likely to agree that everyone in their groups learned the assigned material, that contributions were required from all students, that the group work was not completed until all members finished their assignment, and that the teacher divided up materials so that everyone had to share. They were significantly less likely to report that all group members received the same grade though both the students of high and low trained teachers indicated that grades based on entire group performance were common.

Students in classes conducted by teachers who had more training in small group instruction methods were significantly more likely to indicate that they liked to cooperate with other students. This was reflected in items related to helping other students, sharing ideas with other students, helping others to learn, and actually learning from others.

Students with more trained teachers were less likely to indicate that they did not get a chance to have their questions answered in class or that they should get along better with other students than they actually did get along with them. Of course, many of these differences may be a result of either the behavior of the teacher who took more interest in group process or just to the fact of more group activity in the class.

The training of teachers in use of small group instruction had little effect on student items that related to feelings of discouragement in school, fear of taking tests, problems with communication with others in class and the perceived difficulty of school work. It did not even effect the degree to which students reported that they liked to work in groups as opposed to working alone.

Students who felt that the quality of their academic work was better when they worked in groups by far out numbered those who felt that their work was of equal quality when working alone or that their work was actually worse when working in a small group. Of 1162 students who responded to a question asking about the relative quality of work, 755 or 65% felt that they did better work in groups than when they worked alone. Only 69 or about 6% felt that they did worse academically when they worked in a group.

TABLE 7

COOPERATIVE LEARNING
STUDENT SURVEY RESPONSES BROKEN DOWN
BY TEACHER AND STUDENT INFORMATION

	TEACHER TRAINING			QUALITY OF ACADEMIC WORK				WEEKLY GROUP LESSONS				STUDENT ABILITY GROUPS			
CATEGORY	HIGH	LOW	P<*	BETTER	SAME	WORSE	P<**	NO LESSONS	1 OR 2	3 or MORE	P<**	HIGH	MEDIUM	LOW	P<**
QUESTION/RESPONDENTS	430	746		755	338	69		186	406	575		417	402	386	
1. When we work together in small groups, we try to make sure that everyone in our group learns all of the assigned material.	1.8	2.0	.001	1.8	2.1	2.3	.000	1.9	2.0	1.9	NSD	2.0	1.9	1.9	NSD
2. When we work together in small groups, we cannot complete an assignment unless everyone contributes.	2.4	2.7	.000	2.6	2.7	2.8	NSD	2.7	2.6	2.6	NSD	2.6	2.6	2.6	NSD
3. When we work together in small groups, our job is not done until everyone in our group has finished the assignment.	1.9	2.2	.009	2.0	2.2	2.5	.003	2.1	2.2	2.0	.045	1.1	1.1	1.2	NSD

*Two tailed T-test
**F-test

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	CATEGORY	HIGH	LOW	P<*	BETTER	SAME	WORSE	P<**	NO LESSONS	1 OR 2	3 or MORE	P<**	HIGH	MEDIUM	LOW	P<**
	QUESTION/RESPONDENTS	430	746		755	338	69		186	406	575		417	402	386	
4.	When we work together in small groups, the teacher divides up the material so that everyone has a part and everyone has to share.	2.3	2.5	.012	2.4	2.4	2.7	NSD	2.4	2.5	2.4	NSD	1.2	1.2	1.3	NSD
5.	When we work together in small groups, we all receive the same grade	2.4	2.6	.026	2.4	2.6	3.0	.001	2.7	2.4	2.6	.006	2.5	2.6	2.5	NSD
6.	When we work together in small groups, everyone's ideas are needed if we are going to be successful.	2.0	2.0	NSD	1.9	2.2	2.7	.000	2.0	2.1	2.0	NSD	2.0	1.9	2.1	NSD
7.	When we work together in small groups our grade depends on how much all members learn.	2.5	2.6	NSD	2.5	2.7	2.8	.012	2.6	2.5	2.5	NSD	2.6	2.5	2.5	NSD

*Two tailed T-test
**F-test

TABLE 7

COOPERATIVE LEARNING
STUDENT SURVEY RESPONSES BROKEN DOWN
BY TEACHER AND STUDENT INFORMATION

		TEACHER TRAINING			QUALITY OF ACADEMIC WORK				WEEKLY GROUP LESSONS				STUDENT ABILITY GROUPS			
	CATEGORY	HIGH	LOW	P<*	BETTER	SAME	WORSE	P<**	NO LESSONS	1 OR 2	3 or MORE	P<**	HIGH	MEDIUM	LOW	P<**
	QUESTION/RESPONDENTS	430	746		755	338	69		186	406	575		417	402	386	
8.	When we work together in small groups, I have to find out what everyone else knows if I am going to be able to do the assignment.	2.7	2.6	NSD	2.6	2.8	3.1	.018	2.7	2.6	2.7	NSD	2.8	2.7	2.5	.010
9.	In this class I like to share my ideas and materials with other students.	2.1	2.3	.000	2.1	2.4	2.7	.000	2.2	2.3	2.2	NSD	2.2	2.2	2.3	NSD
10.	In this class, I can learn important things from the other students.	2.0	1.9	.043	1.8	2.3	2.8	.000	2.2	2.0	2.0	NSD	2.2	2.0	1.9	.003
11.	In this class I like to help other students.	1.9	2.2	.000	2.0	2.2	2.4	.000	2.1	2.1	2.0	NSD	1.9	2.0	2.2	.024

*Two tailed T-test
**F-test

TABLE 7

COOPERATIVE LEARNING
STUDENT SURVEY RESPONSES BROKEN DOWN
BY TEACHER AND STUDENT INFORMATION

		TEACHER TRAINING			QUALITY OF ACADEMIC WORK				WEEKLY GROUP LESSONS				STUDENT ABILITY GROUPS			
	CATEGORY	HIGH	LOW	P<*	BETTER	SAME	WORSE	P<**	NO LESSONS	1 OR 2	3 or MORE	P<**	HIGH	MEDIUM	LOW	P<**
	QUESTION/RESPONDENTS	430	746		755	338	69		186	406	575		417	402	386	
12.	In this class I try to share my ideas and materials with other students when I think it will help them.	2.0	2.2	.001	1.9	2.3	2.5	.000	2.2	2.1	2.0	.043	1.9	2.1	2.2	.004
13.	In this class it is a good idea for students to help each other learn.	1.6	1.7	.023	1.6	1.8	2.3	.000	1.7	1.8	1.6	.008	1.7	1.6	1.7	.050
14.	In this class I like to cooperate with other students.	1.9	2.0	.047	1.9	2.1	2.4	.000	2.0	2.0	1.9	NSD	1.9	1.9	2.0	.042
15.	In this class students learn lots of important things from each other.	2.1	2.2	.023	2.0	2.4	2.8	.000	2.2	2.2	2.1	NSD	2.3	2.1	2.1	.003

*Two tailed T-test
**F-test

TABLE 7

COOPERATIVE LEARNING
STUDENT SURVEY RESPONSES BROKEN DOWN
BY TEACHER AND STUDENT INFORMATION

		TEACHER TRAINING			QUALITY OF ACADEMIC WORK				WEEKLY GROUP LESSONS				STUDENT ABILITY GROUPS			
	CATEGORY	HIGH	LOW	P<*	BETTER	SAME	WORSE	P<**	NO LESSONS	1 OR 2	3 or MORE	P<**	HIGH	MEDIUM	LOW	P<**
	QUESTION/RESPONDENTS	430	746		755	338	69		186	406	575		417	402	386	
16.	School work is fairly easy for me.	2.5	2.5	NSD	2.5	2.5	2.5	NSD	2.5	2.5	2.5	NSD	2.2	2.6	2.8	.000
17.	Sometimes I think the scoring system in this class is not fair.	2.5	2.5	NSD	2.5	2.4	2.5	NSD	2.5	2.5	2.5	NSD	2.4	2.5	2.6	NSD
18.	I find it hard to speak my thoughts clearly in class.	3.0	3.0	NSD	3.0	3.0	3.0	NSD	3.0	2.9	3.1	NSD	2.7	3.0	3.4	.000
19.	I should get along with other students better than I do.	3.2	3.0	.012	3.1	3.0	2.9	NSD	3.0	2.9	3.2	.002	2.8	3.2	3.3	.000
20.	Whenever I take a test I am afraid I will fail.	2.8	3.0	NSD	3.1	2.7	2.7	.000	3.0	3.0	2.8	NSD	2.6	2.9	3.3	.000
21.	I often get discouraged in school.	2.7	2.8	NSD	2.8	2.7	2.8	NSD	2.8	2.9	2.7	NSD	2.4	2.9	3.1	.000

*Two tailed T-test
**F-test

Those who felt they did better were more likely to say that their groups made sure that everyone learned all assigned material and that the group keeps going until everyone has finished the project. These students were also more likely to report that all group members received the same grade for the work of the group and that the ideas of all group members were needed for success.

Not surprisingly, those who feel they do better academically like to share ideas and materials with other students, feel that they learn from other students and like to help others. They do not feel that school work is any harder for them than it is for other students They are also no more likely to feel that they will fail on tests than those who feel that they do worse work in groups.

Those few who feel that they do not do as well when they work in groups say they most like to work by themselves. They are more likely to report that they feel upset in school and that they feel lonely in class. Those who feel they do worse work in groups were also not so positive about the idea that students learn from each other or that it is a good idea for students to help each other learn. They are no different from other students in feeling that they get discouraged at school or that they think school is difficult.

The number of group lessons reported by students seemed to make a difference in relation to grading. Those reporting one or two group lessons a week reported that it was more likely that all group members got the same grade than those who reported no lessons or those who reported three or more lessons. Those who reported more group lessons were also more likely to report that they try to share their materials in class because they think it will help others and to feel that it is a good idea for students to help each other learn. Those who reported more group lessons also felt that they got along better with other students.

Those who were identified as lower achievers by teachers were more likely to feel that they had to find out what other group members knew to finish assignments and that they could learn important things from other students. They were less likely to indicate that they like to help other students in class or that they liked to cooperate with other students. However, they were more likely to feel that students learn lots of important things from each other.

The low achievers were more likely to indicate that they often get discouraged in school and that they fear failure on tests. They found it hard to speak their thoughts clearly in class. They were less likely to consider themselves a good student and more likely to feel upset in class. The low achievers were more positive about working in groups as opposed to working alone than high achievers but no different in these feelings than students of average ability. The low achievers were more likely to say that school work was hard for them.

There were a set of specific questions included about grading practices because of the intensity of the discussion of the issue by teachers in the initial interviews. The cooperative groups grading practice of only giving group grades was not acceptable to many of the teachers. On the survey, the average student rating of grading practice was a 2.5 which could be characterized as meaning sometimes fair and sometimes not fair.

Table 8 presents the responses of students on the grading policy related survey items. While there are significant differences in the practices reported for high and low training group teachers, they do not appear to be substantial. High training teachers are a little more likely not to give individual grades and to always to grade students as a group. It appears that there is a lot of variety in the group versus individual grading practices. Actual practice clearly differs notably from the reliance on group rewards recommended for students by Johnson and Johnson (1984). Whatever the training of the teacher and philosophy of the cooperative learning approach, most teachers appear to place reliance on their experience with students in the classroom when choosing how to give grades.

Table 8
Cooperative Learning
Grading Practice of Teachers Reported By Students

	For High Training Group Teachers N=436			For Low Training Group Teachers N=776			P<*
	Always	Some-Times	Never	Always	Some-Times	Never	
Do you get graded as a group when you do group work?	39%	47%	5%	34%	47%	10%	.053
Do you get an individual grade for the work you do in groups?	22%	50%	15%	27%	51%	10%	.056
Do you get both individual and group grades?	17%	42%	30%	21%	43%	25%	.037

*Sommers D

Student responses to questions about small group based instruction paint an interesting picture. The perception of students that more lessons involved small group work in more academic areas for those in the classrooms of trained teachers corresponds to the reports of the teachers about lessons, particularly the use of more lessons in math. The number of students who feel that they do better academic work in groups is substantial. Students generally feel that they can help and be helped by their classroom peers.

Those students who report that small groups are used in instruction three or more times a week respond more positively to the survey items related to communication and social interaction. This may be directly related to the reports from teachers that those who are more likely to use groups are also more likely to encourage students in group process and interaction skill development. Teacher perceptions of how well students do academically seem to correspond to the students own feelings with low achievers reporting more difficulty in doing school work and communicating their ideas as well as more appreciation for the assistance they receive from others when working in groups.

Assessing student achievement gains is difficult. Each teacher involved in the study used what was learned in cooperative learning training in a different way from all other teachers. Decisions about when to use the various elements of cooperative learning, decisions about grading policy, decisions about which students would be grouped together, decisions about how long cooperative experiences would last, and decisions about what specific content would be introduced were all present each time a teacher opted to use a small group learning experience. There are also potential differences in potential student reactions to group work based on the individual characteristics of students and of school programs. No measure or set of measures was available to document how students had changed after each experience.

Because of these potential limiting factors and the inability to control for potential covariates, only a limited attempt was made to gauge overall student learning by examining the changes which may have occurred in student basic skill attainment. It was decided to concentrate on elementary student achievement since the elementary students would have been involved in activities related to basic reading and mathematics skills as assessed by the Iowa Tests of Basic Skills. Elementary students were also thought more likely to have worked with only one teacher and, therefore, to have been exposed to more consistent exposure to small group instruction during the course of the year.

Analysis of variance of composite normal curve equivalent scores for all students with 1986 and 1987 scores showed that these 674 students had made some small gains which came close to significance without significant interaction effects for either their ability or the training of their teachers. Table 9 displays the average group changes in composite normal curve equivalent scores from 1986 to 1987 for 471 elementary students who were enrolled in grades three, four, five, and six. There were significant but small overall gains for these students. With variation due to grade treated as a covariate, the training of teachers was demonstrated to have significant effect ($F = 8.948$, $p > .003$). Unfortunately the overall gain for the students of teachers with more training in cooperative learning was only about 40% of the gain shown by the students of teachers who had less training.

The differences in the group averages are very small. A rule of thumb for the interpretation of changes in NCE scores suggested by Chapter I program evaluators is that a change of 7 is large enough that it would be considered "educationally significant". That is, it would be a change large enough that a teacher might notice it.

The consistently positive gains for low achievers tend to support the observations of teachers that cooperative learning in groups benefits low ability students. It also suggests that the low ability students must be correct in their observations that they can get help from other group members to understand and complete their school work.

Table 9
Cooperative Learning
Student Achievement Gains
Iowa Tests of Basic Skills Composite Normal Curve Equivalent Score
Gains Spring 1986 to Spring 1987

Area/Grade Training		Three	Four	Five	Six	Overall
	High	-0.91	-0.88	1.21	3.01	.064
	(N)	(47)	(57)	(49)	(55)	(208)
	Low	-1.21	-0.95	1.61	2.80	1.52
	(N)	(40)	(58)	(62)	(103)	(263)
Student Ability						
	High	-1.02	0.34	2.48	2.23	1.29
	(N)	(26)	(42)	(43)	(52)	(163)
	Average	-2.06	-0.63	-2.60	2.60	-0.23
	(N)	(32)	(38)	(36)	(56)	(162)
	Low	0.17	0.43	4.47	3.86	2.46
	(N)	(29)	(35)	(32)	(50)	(146)
Overall	Average	-1.01	0.05	1.43	2.88	
	(N)	(87)	(115)	(111)	(158)	

The generally positive gains of high achievers when compared to average students is interesting. It may explain the slightly more positive attitude of the high achievers toward group interaction. It is tempting to speculate that these achievement gains may be a result of the dynamics within groups where an assignment can not be successfully completed until all finish. Here, it often falls to the high achievers to take the lead and serve as both guides and helpers for less gifted students. This role may result in the high achievers increasing their familiarity with materials and improving their own basic skills as they help others to learn.

Conclusions

The most striking finding from reviewing this large scale program to train teachers to improve their use of small group instructional methods is how positive both teachers and students are about small group instruction. Teachers like it as a mode of teaching and students like it as a way of learning. Teachers see it as a way of actively involving students in learning and increasing the amount of time that students spend actually engaged in the learning process. Students see it as fun and enjoy the social interaction and the opportunity to work with others. Low achieving students particularly like the help they get to complete group assignments.

Many teachers decided to commit their own time and money to take advantage of an opportunity provided by the Anchorage School District to improve their professional skills. About 25% of the teachers in a school district with more than 2,400 teachers took graduate level courses in small group methods and participated in workshops which were beyond the normal in-service activities sponsored by the school district. This shows the popularity of the small group approach and is a measure of the strength of the belief of many teachers that cooperative small group learning is good for their students.

While advanced training in cooperative learning did not seem to have much of an effect on academic attainment of students as measured by a norm referenced standardized test of basic skills, there was a wide agreement among the teachers and students that work in groups has a positive effect on student learning. There were also indications from the surveys of teachers and their students that the more trained teachers were more likely to focus on the dynamics of the groups and communication skills. There was no measure of interpersonal communication skills included on the Iowa Tests of Basic Skills and unfortunately no opportunity to actively measure changes in students communication ability was present. However, the self reports are clear in showing that teachers with more training tend to use more diversity in group assignments and may place more emphasis on communication behavior.

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COOPERATIVE LEARNING SUMMARY

	1983-1984		1984-1985		1985-1986		1986-1987	
SYMPOSIUM	Cooperative Learning (Roger Johnson, March, 6 hours)	110	Helping Every Child Achieve Socialization Skills in an Information Age (David Johnson, April, 3 hours)	115	Critical Thinking Skills (Art Costa, April, 6 hours)	*(100)	Principles of Adult Lrng (Malcolm Knowles, March, 6 hours)	*(55)
MANAGEMENT ACADEMY (3 hours per session)	Building a Cooperative School (March)	19	Cooperative Learning: Review of an Instructional Strategy Eff for K-12 (April)	26	Cooperative Learning: How It Fits in ASD (October)	30	Cooperative Learning Strategies (November)	12
CURRICULUM (3 hours per session)					Sci Curriculum Comm (Oct) Coordinators, Tchr Experts Directors, Specialists (Jan) Content Reading Tchrs (Jan) Sci Curriculum Comm (Jan)	15 21 12 15	Cross-Dist Music Tchrs (Dec) Teacher Assistants (March) Substitute Teachers (April)	60 16 35
STATE RELEASED TIME IN-SERVICE (3-6 contact hours)			Chugiak High Sch (Jan) Ptarmigan Elem (Jan) *Bartlett High Sch (Jan)	76 20 93	Clark Junior High (Aug) Steller (Aug) *Central (Oct) SAVE II/Search (Oct) Taku Elm (Oct) Chugiak H.S. (Jan) Romig J.H. (Jan) Chester Valley Elm (Jan) College Gate Elm (Jan) McLaughlin (March) Abbott Loop Elm (March) Baxter Elm ((March) Bayshore Elm (March) Spring Hill Elm (March)	41 13 39 18 21 76 39 19 17 17 29 27 22 31	Baxter Elem (Aug) Ptarmigan (Oct) NSTA, Keynote Address (Dec) Coop Lrng: Promoting Rational Thnkg & Peer Support in Clsrm (2 hours) Creekside Elm (Jan) Eagle River Elm (Jan) *Inlet View Elm (Jan) Klatt Elm (Jan) Mt. View Elm (Jan) Scenic Park Elm (Jan) Willow Crest Elm (Jan) Nunaka Valley Elm (Apr) O'Malley Elm (Apr) Wonder Park Elm (Apr)	27 20 600 19 19 14 32 33 29 27 16 25 21
PEER COACHING TEAMS (6 contact hours)			East High PCT (Jan)	10	Peer Coaching Teams	60		
CREDIT COURSES (15 contact hours per credit)			Beg Coop Lrn (Aug) Coop Lrn in Comp Ed (Jan) Hawaii-ASCD + PDK (March) Coop Lrn in Comp Ed (Apr) Training of Trainers: Sagamore (July) (45 hours)	60 65 20 30 4	Adv Coop Lrn (Aug) Beg Coop Lrn (Oct) Coop Lrn Follow-up (Nov) Beg Coop Lrn (Jan) Coop Lrn Follow-up (Feb) Hawaii-ASCD+PDK (Mar) Peer-Coaching/Coop Lrn (Mar) Adv Coop Lrn (Apr) Beg Coop Lrn (June) Trng of Trainers (June) (7 credits)	50 56 32 69 20 14 30 35 70 30	Implementing Coop Lrn (Oct) Bldg Collegial Skills (Dec) Implementing Coop Lrn (Jan) Peer Coaching/Coop Lrn (Feb) Seminar for Trainers (Apr) Bldg Thinking Skills into Coop Lrn Group (March)	20 23 16 8 4 22

SUMMARY	1983-84		1984-85		1985-86		1986-87	
	In-services	-0-	In-services	3	In-services	14	In-services	13
	Credit Courses	-0-	Credit Courses	5	Credit Courses	10	Credit Courses	6
	Other	2	Other	3	Other	6	Other	4
	Total Training Sessions	2	Total Training Sessions	11	Total Training Sessions	30	Total Training Sessions	23
	Total Participants	129	Total Participants	519	Total Participants	868	Total Participants	1098
	Total Contact Hours	717	Total Contact Hours	4134	Total Contact Hours	8523	Total Contact Hours	5852

* Full-day Sessions
* Not counted in totals

STUDENT QUESTIONNAIRE : COOPERATIVE LEARNING

You can help your teacher and other teachers understand what you think of working on class projects in groups by answering some questions. Please answer all of the questions.

1. In which of the following subjects have you worked on group projects? (Check all that apply.)

   ____English/Language Arts ____Science

   ____Social Studies ____Music/Art

   ____Mathematics ____Foreign Language

   ____Health/Physical Education ____Industrial Arts/Vocational Ed.

   ____Special Education ____Reading

2. How often do you work with other students in a group?

   Number of times each day _____ Number of times a week _____

3. Do you feel that working with a group of students helps you do better school work?

   ____Yes, I do better work.

   ____No, my work is about the same.

   ____No, my work is not as good.

4. When you work together in small groups each member of the group receives:

   a. a group grade ____yes ____sometimes ____no

   b. an individual grade ____yes ____sometimes ____no

   c. both a group grade and an individual grade ____yes ____sometimes ____no

5. Do you like working with other students in class on school projects? Do you think it is a good idea? Why?

   _____

   _____

   _____

NUMBER: _____

Put an X in the box which tells how true each of these statements is of you.

	Completely True	True Much Of The Time	Sometimes True And Sometimes False	False Much Of The Time	Completely False
1. When we work together in small groups, we try to make sure that everyone in our group learns all of the assigned material.					
2. When we work together in small groups, we cannot complete an assignment unless everyone contributes.					
3. When we work together in small groups, our job is not done until everyone in our group has finished the assignment.					
4. When we work together in small groups, the teacher divides up the material so that everyone has a part and everyone has to share.					
5. When we work together in small groups, we all receive the same grade.					
6. When we work together in small groups, everyones' ideas are needed if we are going to be successful.					
7. When we work together in small groups our grade depends on how much all members learn.					

Attachment B

	Completely True	True Much Of The Time	Sometimes True And Sometimes False	False Much Of The Time	Completely False
8. When we work together in small groups, I have to find out what everyone else knows if I am going to be able to do the assignment.					
9. In this class I like to share my ideas and materials with other students.					
10. In this class, I can learn important things from the other students.					
11. In this class I like to help other students.					
12. In this class I try to share my ideas and materials with other students when I think it will help them.					
13. In this class it is a good idea for students to help each other learn.					
14. In this class I like to cooperate with other students.					
15. In this class students learn lots of important things from each other.					
16. School work is fairly easy for me.					
17. Sometimes I think the scoring system in this class is not fair.					

	Completely True	True Much Of The Time	Sometimes True And Sometimes False	False Much Of The Time	Completely False
18. I find it hard to speak my thoughts clearly in class.					
19. I should get along with other students better than I do.					
20. Whenever I take a test I am afraid I will fail.					
21. I often get discouraged in school.					
22. I have lots of questions I never get a chance to ask in class.					
23. I am often lonely in this class.					
24. I am a good student.					
25. I often feel upset in school.					
26. I usually like to work better in groups than I like to work alone.					

bm2.07

EDUCATORS ASSESSMENT : COOPERATIVE LEARNING

Directions:

Please answer each of the following questions. They will help us understand your experience with cooperative learning.

I. Experience With Cooperative Learning (Please check all that apply.)

___I have talked to other teachers about cooperative learning.

___I have read articles about cooperative learning.

___I have discussed cooperative learning with other teachers and tried some of their ideas in my classroom.

___I have participated in an after school inservice on cooperative learning.

___I have participated in an inservice on cooperative learning as part of a District inservice day.

___I have participated in a workshop on cooperative learning.

___I have participated in a full length University credit course on cooperative learning.

___Other:_____

AREAS OF COOPERATIVE LEARNING USE

II. (Please check all that apply.)

To what extent have you used cooperative learning groups in any of the following subject areas?

	Number of Times Used				
	None	1-2	3-5	6-10	11+
A. Reading	___	___	___	___	___
B. Mathematics	___	___	___	___	___
C. Science	___	___	___	___	___
D. Social Studies	___	___	___	___	___
E. Health/P.E.	___	___	___	___	___
F. Music/Art	___	___	___	___	___
G. Special Education	___	___	___	___	___
H. Industrial Arts/ Vocational Education	___	___	___	___	___
I. Foreign/Language	___	___	___	___	___

III. Overall, how much class time in an average week is devoted to cooperative learning activities?

_____None ____%of the time

During the past week, how many cooperative learning lessons have you taught?

____0 ____1-2 ____3-5 ____6-8 ____more than 8

What group size do you usually use in your classroom?

____2-3 ____4-6 ____6+ ____depends on task

IV. When students work together in groups in your class, how often do you use the following to organize and encourage cooperative learning activity?

	Never	Rarely	Occasionally	Usually
Provide the groups with limited materials to force students to share materials.	___	___	___	___
Provide individual group members with special materials to force sharing if there is to be a successful completion of the group task.	___	___	___	___
Assign special roles to certain group members to insure that all must work together to produce a final product.	___	___	___	___
Provide grades or rewards to individual group members based on the performance of the entire group.	___	___	___	___
Monitor and intervene in group activities to encourage balanced participation and stimulate cooperation.	___	___	___	___
Usually provide groups with feedback on my observations of group behavior and the use of cooperative skills	___	___	___	___
One group member is designated to observe group action and report on group activities.	___	___	___	___
Provide groups time to summarize activities and hold debriefing sessions after group projects are completed.	___	___	___	___

Are there other cooperative learning strategies which you commonly use?

_____yes _____no

_____

_____

_____

_____

V. Please indicate your agreement with each of the following statements.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I believe that cooperative learning is an effective instructional technique in most content areas?	___	___	___	___	___
2. I believe that cooperative learning increases student participation in learning activities.	___	___	___	___	___
3. I believe that cooperative learning improves student communication and decision making skills.	___	___	___	___	___
4. I believe that cooperative learning encourages and improves the performance of high ability students.	___	___	___	___	___
5. I believe that cooperative learning encourages and improves the performance of average ability students.	___	___	___	___	___
6. I believe that cooperative learning encourages and improves the performance of low ability students.	___	___	___	___	___
7. I believe that using cooperative learning is an efficient teaching technique.	___	___	___	___	___
8. I plan to increase my use of cooperative learning in the classroom.	___	___	___	___	___
9. Rewarding individual performance based on group success is an equitable method of grading.	___	___	___	___	___
10. I plan to make use of future opportunities for additional training in cooperative learning.	___	___	___	___	___

NUMBER_____

] Please send me a copy of the report when it is completed.